

**Forage Research  
In Texas,  
1987**

liminary observations indicate that it is similar in natural re-establishment ability to 'Woogenellup' subclover.

### Introduction

Subterranean clover is a winter annual forage legume that has been planted by an increasing number of cattlemen in Central and South Texas over the last few years. Subclover is popular because it is low growing, and the seed is formed in small burs near the soil surface allowing seed production under continuous grazing. Nearly all of the commercial cultivars available have been developed in Australia, and the majority of the commercial seed is imported from that country. The most commonly sold cultivar in Texas has been 'Mt. Barker', with a lesser amount of 'Woogenellup'. Both of these cultivars have been observed to show iron chlorosis on high pH soils. Most of the soils in Central and South Texas are pH 7 or above. The cultivar 'Clare', also developed and imported from Australia, has been reported in the literature to be better adapted to high pH soils. Previous evaluations of 'Clare' on neutral or acidic soils at Beeville and other locations in the south have not resulted in any substantial yield advantages. This report summarizes several plot and pasture evaluations comparing 'Clare' with 'Mt. Barker' as well as other cultivars on neutral to high pH soils.

### Procedure

All studies were planted with 10 to 12 lbs/A of seed that were inoculated with "Pelinoc" system using WR type rhizobium. Specific planting dates varied with each experiment from mid-October to mid-November. Sod plantings were made with a "Tye" no-till drill on 10-inch row spacing. All plots were planted on prepared seedbed using a Kincaid plot drill with 12-inch row spacings. Phosphorous fertilizer was applied as 0-46-0 if a soil test indicated a need. The minimum amount (if any was applied) was 100 lbs/A with a maximum of 200 lbs/A of 0-46-0. The soils were either Clareville, Parrita, and Weesatche sandy clay loams ranging from pH 7 at the Clareville sites to pH 8+ at the Parrita sites.

### Results and Discussion

The 1985 to 1986 plot study harvested on February 20, 1986 showed that 'Clare' outyielded 'Mt. Barker' and all the other subclover cultivars by about 200 percent (1,675 vs. 850 lbs/A). By the second harvest in April, 'Clare' yields were similar to the other cultivars. These plots were left undisturbed and allowed to re-establish in the fall and winter of 1986 to 1987. The stand ratings of 'Clare' and 'Woogenellup' were similar and also superior to all other entries. As has been previously observed, the reseeding stand of 'Mt. Barker' was inferior to 'Woogenellup'. No harvests were made on these plots in 1987, but height measurements taken on March 17, 1987 showed that 'Clare' was 5 inches taller than 'Mt. Barker' (16 vs. 11 inches). The soil at this site was a Parrita sandy clay loam and the pH was 8.1.

In fall 1986, 'Clare' and 'Mt. Barker' comparison studies were made at several sites on soils ranging in pH from near

## Clare Subterranean Clover for South Texas Pastures

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### Summary

'Clare' subterranean clover has received increased attention in South Texas over the last two growing seasons. 'Clare' is well adapted to the high pH soils of the region and has demonstrated a significant yield advantage over most of the standard subclover cultivars previously used. Pre-

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harvested for yield on January 6, February 10, and March 18, 1987.

### Plant Introductions

In an adjacent area, some 270 PIs representing 16 species of annual medics were planted for initial evaluation on November 6, 1987. This site received 100 lbs/A of 0-46-0 at the same time as the cultivar experiment, but was not treated with Eptam. These evaluations were conducted with a limited number of seed (less than 75 seeds) so were direct planted in a single row 5-ft long with a plot drill. The seeds were inoculated as described in the cultivar trial. Due to a limited number of seed, none of these PIs were replicated, but several of the medic cultivars used in the cultivar test were inserted periodically in this planting to be used for comparisons. These plots were not harvested, but were rated for forage potential on February 18 and April 17, 1987 using the cultivar 'Jemalong' as the standard.

## Results and Discussion

### Cultivar Test

The dry matter yields of the cultivar test by harvest and total for the season are presented in Table 1. In total yield, there are only small differences between the cultivars evaluated. 'Paraggio', the latest maturing cultivar ranked in the middle at the first harvest, and was either top or second from top in the last and second harvest, respectively. 'Jemalong', the second highest in total yield has been evaluated at Beeville in a previous test. 'Jemalong' was the top yielding cultivar in that test. In that previous test 'Jemalong' also suffered the least amount of tissue damage

following a severe freeze (9°F). 'Snail' and 'Serena' are two cultivars that were planted in duplicate in this test. They ranked highest in the first harvest and lowest in the last harvest. 'Snail' medic has a very large seed and it germinates and establishes very rapidly. However, it also has a very large stem and does not respond well to mechanical defoliation. In a previous test, 'Snail' and 'Paraponto' experienced the most tissue damage following a freeze.

### Plant Introductions

Of the 270 PIs evaluated, over one third rated high at one or both of the rating times. PI 384665 rated higher than the check cultivars in both ratings. This PI is from the species *M. truncatula* which is the same species as 'Paraggio' and 'Jemalong'. Several PIs from *M. orbiculais*, *polymorpha*, and *M. scutellata* were rated as high or higher than the check cultivars in one or both of the ratings taken.

These data suggest that the annual medics need to be considered as one of the potential winter annual legumes for South Texas. They are more productive than the true clovers in the mid-winter period. The yields obtained from the medic cultivar study in early January were as good as or better than yields obtained from clover cultivar evaluations taken some 3 weeks later. These legumes need further evaluation in South Texas, particularly in areas south of Beeville where the potential for a hard freeze is minimal. A 5-acre planting of 'Jemalong' was made at La Copita Research Area (south of Alice) to observe growth and reseeding ability. It was planted in late November 1986 and has grown quite well. It produced seed, but only time will tell if it will re-establish and persist.

TABLE 1. SEASONAL PRODUCTION OF ANNUAL MEDICS AT BEEVILLE, 1986 TO 1987

Medic Cultivar	Harvest Dates			Total
	Jan. 6	Feb. 10	Mar. 18	
	Pounds of dry matter per acre			
Paraggio <sup>t</sup>	1,341bc*	1,816ab	1,841a	4,997a
Jemalong <sup>t</sup>	1,220cd	1,769ab	1,535ab	4,524ab
Snail <sup>s</sup>	2,107a	1,042d	1,034bcd	4,418ab
Paraponto <sup>r</sup>	1,085cd	1,475abcd	1,744ab	4,304ab
Sephi <sup>t</sup>	882d	1,958a	1,265abcd	4,105ab
Sapo <sup>r</sup>	998cd	1,331bcd	1,707ab	4,037abc
Circle Valley <sup>p</sup>	1,372bc	1,434abcd	1,204abcd	4,010abc
Serena <sup>p</sup>	1,691ab	1,447abcd	728cd	3,865abc
Paraponto <sup>r</sup>	854d	1,488abcd	1,402abcd	3,744bc
Snail <sup>s</sup>	1,743ab	986d	974bcd	3,704bc
Serena <sup>p</sup>	1,404bc	1,587abc	657d	3,648bc
Tetragold Ryegrass	340e	1,124cd	1,455abc	2,920c

t = *M. truncatula*, s = *M. scutellata*, r = *M. rugosa*, p = *M. polymorpha*.

\*Yields followed by the same letter are not significantly different at the 0.05 level using Duncan's Multiple Range Test.